

Taxation and Investment Implications of Non-industrial Private Forestry within a Boreal Swedish Municipality

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The Swedish tax system affects distribution of forest revenue between national, municipal and individual interests. The study reported here takes a Boreal municipality perspective, with the objective of investigating the tax and investment implications of non-industrial private forestry (NIPF) in a case-study municipality at these three interest levels. Sales revenue, operating costs, investment, disposable income and direct tax revenue generated in NIPF within the boreal municipality are quantified, drawing on income tax return data. The question addressed is, does NIPF contribute to the local economy and thereby to development and maintenance of infrastructure in a typical boreal municipality, given the present NIPF ownership structure and tax system? Results support two different views. On one hand, tax revenues generated from NIPF to the resource municipality amounted to only 17% of the direct tax revenues or less than 1% of the tax revenues in the municipality budget. On the other hand, NIPF owners returned as much as 72% of sales revenue back into their firms in form of operating costs, and 20% in form of investments.

Keywords: boreal municipality, forestry taxation, revenue shares from NIPF, rural development, northern Sweden

INTRODUCTION

The interior of northern Sweden, areas with boreal municipalities¹, was developed during the 19th century as a result of a national colonisation policy and an expanding

¹ The circumpolar boreal forest, which is the second most extensive terrestrial biome on earth, represents a wood resource of global significance that is an important part of the cultural and economic wealth of northern countries (IBFRA 1997). Boreal municipalities are referred to in this paper as municipalities in northerly inland Sweden, where forestry has been an important factor for development.

forestry and wood-processing industry (Arpi 1959). Forestry became the backbone for the inland area. According to Persson (1998), half of the population was to a greater or lesser extent dependent on forestry for their income until the beginning 1960s, when mechanised methods were introduced as a replacement for labour intensive techniques in forestry operations. Since then, the impact of forestry on municipal economies has gradually decreased. This decrease can be described as a transformation from reliance on small-scale farming and small-scale forestry combined with seasonal employment in large-scale forestry, to a situation where public resources and public employment are of significant importance (Persson 1998, Lindgren *et al.* 2000).

What is known as the 'delimitation process'² involved transfer of former Crown land to farmers, and a large number of inhabitants in boreal municipalities continue to be forest owners (Törnqvist 1995). Today, about 40% of the forest land in northern Sweden belongs to non-industrial private forest (NIPF) owners (National Board of Forestry 2003). However, major structural changes have taken place also within NIPF; an increasing number of forest owners are non-residential and a majority no longer earns their living from forestry or agriculture (Berlin *et al.* 2003, Lidestav and Nordfjell 2003). In spite of this, the forest property continues to be of importance for the owners' decisions about support and lifestyle (Törnqvist 1995). The forest represents other monetary and non-monetary values, such as wood for heating and construction, hunting, recreation, social welfare, and the possibility to keep in contact with native environment and relatives (Lidestav and Nordfjell 2003). Consequently, there are a number of reasons why an individual owner may keep the forested property and transfer it to the next generation (Törnqvist 1995).

Forestry and also the value of the forest property, depends on the availability of support mechanisms, including infrastructure such as forestry roads, extension services and contractors. In addition, access to general infrastructure such as public services and commerce are of importance for forestry objectives and property value (Government letter 2001-2002:173, Paulsson 2002). The municipality is the lowest governmental level in Sweden³, with specific responsibilities for infrastructural maintenance and development, and is also a key actor regarding public services and indirectly supporting private commerce and development. Funding for municipal activities is mainly made available through the local tax right and state grants (Hjelmquist 1994). During the 1990s, as result of demographic changes and changes in national government policies, municipal responsibilities for welfare activities

² The delimitation process and the redistribution of land involved transfer of former Crown land to farmers. Simultaneously, land was purchased by sawmilling companies. For the forest land of north interior Sweden this process started in the second half of the 18th century. The delimitation was motivated by an attempt to generate a yield from land and forest, to secure a living for families, and to generate acceptable tax revenues (Stenman 1983).

³ Swedish public administration is organised at two levels, the national and the municipal, the latter being organised into county council districts, within which are local municipalities. The county councils are foremost responsible for health and medical service (Isaksson and Reepalu 2002). Municipalities are administrative units of local self-government, following the principle that the municipality itself should decide the design of its public sector activities. The municipal government and their activities are motivated by their contribution to local adjustments, democracy and efficiency. Nonetheless, this is done in cooperation with and with instructions from the national government (Hjelmquist 1994).

expanded, including increased responsibilities for secondary school and aged care (Johansson 2000). In spite of structural changes in forestry, forestry is considered as important for rural areas and development (Government letter 2001/2002:172).

However, institutional, political and social relationships extend beyond community boundaries and affect the distribution of the benefits of the forests, factors that can influence local well-being and development (Tykkyläinen *et al.* 1997, Tykkyläinen 1998). Lundberg and Karlsson (2002) raised the questions of 'what way' and 'for whom' the forest constitutes a resource. These authors related part of the answer to power expressed through ownership and usufruct rights, arguing that forest accessibility and not the abundance of forest resources is the most important issue for the local society. Further, economic regulations determine property rights, and in particular the right to use the property and the income generated from it (North 1990).

Besides property, the *Forestry Act* (1993:553) sets the overriding rules for management of productive forest land in Sweden, and the tax system is an important institutional framework for the forest ownership. The tax law formalises various legal forms of business activity and the position of the forest owner as employee or self-employed, which is an important role of the tax system besides the obvious fiscal function (Törnquist 1995). This institutional framework, affects distribution of forest revenue between the national government, the municipality and individual interests. Further, a forest owner's mode of action in terms of production, consumption, and investment in forestry activities, is reflected in the income tax return form.

In this paper, the boreal municipality perspective is emphasised. Accordingly, the crucial question is whether NIPF contributes to the local economy and thereby to development and maintenance of infrastructure within the municipality, given the current ownership structure and tax system. Specifically, the objective is to investigate the outcome of the tax system considering sales, operating costs, investment and disposable income among resident and non-resident owners, and further direct tax revenues generated to the municipality and national government.

The next section introduces important features of the Swedish tax system in relation to the objective with this study. The case study municipality and the nature of forestry activities within it are then explained, after which the research method employed in this study is outlined. Findings of the analysis of incomes and tax shares are then presented and discussed. Finally, conclusions are drawn about the role of forestry in boreal municipalities.

BRIEF INTRODUCTION TO THE SWEDISH TAX SYSTEM

Sweden has an income tax system where income is divided according to three separate sources designed to include all kinds of income – employment, business activity and capital. At the national government level, direct taxes are levied on all three income categories. Indirect taxes, as value-added tax and social security contributions, are levied by the national government. On a municipal level the tax right is restricted to employment, and work as a source of income within business activity. Local income tax is levied on individuals nationally registered in the municipality. Where an individual is nationally registered affects their various rights

and obligations. For example, an individual that is registered in one municipality has to pay local income tax in that municipality. The municipalities have the right to set their own tax rates (Rabe 2002). Total municipal income tax is based on tax rates for the municipality and county council. About 30% of the municipality tax revenue comprises tax for the county council (SCB 2000). The former principle of municipalities as closed taxation areas is now replaced by a tax equalising system (Gunnarsson 1995). Cost and income equalisation is financed through redistribution between municipalities. Furthermore, a general state grant is distributed on the basis of number of inhabitants in each municipality. Municipalities and county councils with low tax power, high expenditures or a high level of unavoidable structural costs are today compensated through this tax equalising system (Svenska Kommunförbundet 2000).

Possession of a so-called agricultural property, in which forestry can be one land use, is defined as business activity (*Income Tax Act 1999:1229*), (Rabe 2002). Various kinds of business can take part within one business activity, which together comprises the business. In order to accomplish uniformity between different legal forms of business activities, income from business activity organised as a private firm can be classified in three components:

1. Income from capital yield. A considered normal capital yield, based on positive capital within the firm, is calculated and transferred to capital as source of income.
2. Income allocated to a fund for expansion. Money retained in the firm by way of allocation to a specific fund for expansion, is taxed following the same principles and tax rate as for limited liability companies. This imply lower tax rate than income from paid work.
3. Income from business activity (i.e. taxable income from self-employment) is derived after deductions of money allocated to capital and fund for expansion. Local income tax and national government income tax are levied (see Rabe 2002).

What is stated above is that the possibility to calculate income component, affects the income tax revenues to the boreal municipality. Further, an individual that wants to withdraw capital from the property can be favored by the opportunity to calculate a capital yield and allocate it to capital as source of income (Johansson 1999). On the contrary, if an individual has the ambition to let part of the income work within the firm, it can be favorable to transfer part of the income to the fund for expansion (see Rabe 2002). Further, taxation of business activity in Sweden has a close connection to accounting legislation, and a requirement exists to render accounting according to "good custom". The firm's financial result constitutes the basis for taxation and is only affected by a few taxable adjustments. Income and costs must be declared for the taxation year to which they are assignable, the latter in accordance with the Swedish principle of net-income taxation which implies that costs needed to keep up a taxable income within the firm are deductible (*Income Tax Act 1999:1229*), (Rabe 2002, Andersson 2004). In this sense, different mode of actions is reflected in the income tax return form, from which sales, operating costs, investment, disposable income, and direct tax revenues generated can be identified.

THE CASE-STUDY BOREAL MUNICIPALITY OF STORUMAN

Storuman, a typical boreal municipality, is located in the county of Västerbotten in the sparsely populated inland Sweden. The municipality covers an area of 7378 km² and has a population of about 6900, one third living in the municipal centre and the remainder in small villages and scattered settlements (NE 2004). Possession of agricultural property in this area primarily implies possession of a forest property. There are no grain producers and few producers of milk and meat (Alatalo 2004). Employment in the forestry sector in the municipality has decreased from approximately 276 full-time jobs in the 1980s, to approximately 76 in year 2000 (County Forestry Board, Storuman 2003). Industries in Storuman include fabrication of components for forest-machines and weapon lockers, and fabrication of construction saws (NE 2004), as well as a small sawmilling industry. Total income in the annual municipality budget for the year 2000 was SEK 363 M⁴, with the municipality tax base accounting for 47% of this income (Table 1).

Table 1. Sources of revenue for the year 2000 annual budget, municipality of Storuman

Municipal revenues within the annual budget	SEK (M)	SEK (%)
Municipality income tax	170	47
Municipality activity (incl. charges and fees)	66	18
Financial revenues	2	0.5
Equalisation of incomes	24	7
Equalisation of costs	53	15
General State grant	48	13
Total	363	100

Source: Storumans Kommun (2001).

In Storuman there are 272,387 ha of productive forest land (County Forestry Board, Storuman 2003); of which 37% is owned by small-scale owners primarily organised as private firms. Additionally, there is a privately owned but jointly managed forest common of 40,234 ha within the municipality (County Forestry Board, Storuman 2003). Generally speaking, NIPF owners in the north-west of the municipality are joint owners of the forest common and receive an annual dividend in relation to their share. Almost 40% of the productive forest land within the municipality is owned by the state, and 6% is owned by forest companies, both organised as limited liability companies (Table 2).

A timber volume of 109,000 m³ was logged by NIPF during the income year 2000, similar to the mean logging volume of 119,000 m³ for the preceding decade (County Forestry Board, Umeå 2002). Approximately 25,000 m³ in the forest common is logged each year (Pettersson 2002). The dividend from the forest common is a net income for the NIPF owners, declared as income from forestry, hence consisting part of the total sales among NIPF. About 70% of the annual

⁴ US\$1.00 = SEK9.00, approximately.

dividend goes to owners living in the municipality (Eriksson 2002). The returns distributed to the joint owners in year 2000 were SEK 1.1 M (TSA 2004).

Table 2. Forest ownership by class in the municipality of Storuman.

Forest ownership by class, municipality of Storuman	Area (ha)	Proportion of area (%)
Small scale forestry owners	101,397	37
Forest common	40,234	15
Forest companies	15,028	6
State owned forestry	107,782	39
Other (including different forms of limited liability ownership)	7,946	3
Total	272,387	100

Source: SCB (2003), County Forestry Board, Storuman (2003).

RESEARCH METHOD⁵

Owners of agricultural property within the case-study municipality were selected as the unit of analysis for this study. With assistance from Statistics Sweden (SCB), the Total Population Register (31 Dec. 2000) and the Register of Real Estate Assessment (1 Jan. 2001) (SCB 2003), were combined in order to identify each owner and their share of ownership in agricultural property. Individuals were classified as resident or non-resident, depending on whether they were nationally registered within the municipality. Income tax return form data were considered as the most suitable source to obtain revenue shares. From SCB's business statistics for financial year 2000 (SCB 2003), data were selected from income tax return forms submitted by individuals with private firms. These data were combined with agricultural property ownership data, to quantify sales, operating costs, investment, disposable incomes and direct tax revenues from forestry.

Possession of agricultural property in Sweden is always defined as business activity and the owners can choose to organise their business activity in different legal forms, including individuals (i.e. private firms), limited liability companies, unlimited partnerships and economic associations (Rabe 2002). Of agricultural properties with a taxation value of forestry, 92% are owned by individuals, i.e. a majority of the forest owners in Sweden declare their activity as a private firm. These agricultural properties represent 51% of the forest land in Sweden. Considering business activity in general, the private firm is also the most common legal form, representing about 60% of the number of business entities (Rydin 2003).

In the case-study municipality, a total of 2295 individuals were identified as owners of agricultural property holding a total area of 101,397 ha productive forest land. Out of the 2295 individuals, 576 individuals were excluded. Of these, 562 had not submitted an income tax return form as a private firm (perhaps they organised their business activity as another form of legal entity, or simply because they did not declare their income by the due date) and 14 were classified as deceased estates. The

⁵ A more comprehensive account of the research method is contained in Holmgren *et al.* (2005).

remaining 1719 owners controlled 91,699 ha of productive forest land within the municipality of Storuman, declaring their business activity as private firms. However, in that various kinds of activities can together make up the firm, forest owners often have sources of income other than forestry (see Törnqvist 1995), and it was therefore necessary to separate forestry income from other income sources within the firms.

An item in the income tax return form for private firms, where owners define their activity was used to separate activities that were identified as connected to forestry from activities not directly connected to forestry. A forest owner with another source of income (e.g. transportation of groceries) who only used the main income tax return form, and there defined the activity by that income was excluded from the study. Eventual forestry income was not possible to discern on the main income tax return and revenue from these individuals was regarded as mainly originating from income sources other than forestry. Further, individuals who declared income and costs from forestry and another activity on separate forms, but named the main declaration form by the activity not defined as forestry, were excluded only from the tax quantification. This was done because on these forms it is not possible to distinguish taxable income from forestry and non-forestry activities. Individuals with a greater area of productive forest land in municipalities other than in the study municipality were also excluded. Their income was regarded as mainly assignable to forest land outside the municipality. Individuals identified as not being joint owners in the forest common and without productive forest land on their agricultural property were also excluded. In this way, NIPF owners were defined as owners of agricultural property with productive forest land, whose activities were declared and defined as connected to forestry. Further, owners of agricultural property without productive forest land who were identified as joint owners in the forest common, and whose activities were declared and defined as connected to forestry, were also defined as NIPF owners.

As a result of the method applied fewer NIPF owners were included in the quantification of tax revenues and disposable income, comparable to the numbers included in the quantification of sales, operating costs and investment. The per hectare values quantified for tax revenues and disposal income among owners who declared forestry on the main income tax return form, and forest area of the eighty four NIPF owners excluded, were used to estimate tax revenue and disposal income generated among those excluded.

Data in the income tax returns for the income year 2000 were used to quantify sales, operating costs, and investment on an individual owner level. Data at the individual owner level was then totaled for residents and non-residents. Categorisation of data in *sales*, *operating costs* and *investment* followed the items in the income tax return form intended for firms without obligation to establish annual accounts: For example, sales included items named '*sales of goods and materials*' and '*value of goods and material withdrawal from the firm*' in the income tax return.

Tax revenues for this study included what can be defined as direct taxes, municipality income tax, national governmental income tax, capital tax and tax on company profits. The three components of income and thereby tax revenues for private firms defined earlier have been used to separate municipal and national government tax revenues. Municipal income tax revenues have been quantified on the basis of declared taxable income in the income tax return forms and the current

tax rate in municipalities where the NIPF owners resided. National governmental income tax was also quantified based on the declared taxable income and current tax rates. Disposable income was calculated by subtracting sums for direct and indirect taxes paid from the taxable income declared. The income tax return form also reveals the amount of money retained to the fund for expansion and the amount transferred to capital as a source of income. These taxable amounts and the current tax rates were used to quantify national governmental revenues from these sources of income.

Individuals living in Storuman, who mainly or entirely owned forest in other municipalities (non-resident owners from the perspective of other municipalities), were also identified in order to quantify tax revenues generated, using the same method. This was done in order to gain increased knowledge about the relationship between municipalities with forest resources.

RESULTS OF THE STUDY

Sales, Operating Costs and Investment

A total of 1631 owners were included in the quantification of sales, operating costs and investment. Residents accounted for the majority of owners 55%, and for 67% of the productive forest land (Table 3). About 36% of the residents and 30% of the non-residents had a declared sales activity during 2000. Owners with a declared activity accounted for 54% of the productive forest land among residents and 45% among non-residents. Owners with sales had larger mean areas of productive forest land than those without sales (not presented in tables).

Table 3. NIPF owner numbers and forest area, municipality of Storuman, income year 2000

Ownership or area variable	Resident owners	Non-resident owners	Total
Number of owners	894	737	1631
Productive forest area (ha)	59,611	29,916	89,527
Mean forest area (ha)	67	41	55

Total value of sales amounted to 40.8 M SEK. Residents accounted for 67% of the total sales value and operating costs, and 83% of investment (Table 4). Considering only owners with sales activity, among residents those accounted for 87% of operating costs and 82% of investments. Corresponding figures for non-residents accounted for 80% and 50% (not presented in tables).

Table 4. NIPF sales, operating costs and investment, municipality of Storuman, income year 2000 (SEK)

Sale, cost and investment item	Resident owners	Non-resident owners	Total
Total value of sales	27,264,083	13,556,999	40,821,082
Mean value of sales	30,497	18,395	25,028
Total operating costs	19,602,446	9,660,032	29,262,478
Mean operating costs	21,927	13,107	17,941
Total investment value	6,899,004	1,453,681	8,352,686
Mean investment value	7,717	1,972	5,121

Direct Tax Revenues and Disposable Income

The quantification of direct tax revenues from NIPF ownership within the municipality of Storuman was based on 1583 owners – 856 residents and 718 non-residents. Residents owned 67% of the total area of 87,397 ha, i.e. the same proportion as in the former analysis of sales, operating costs, and investment.

The total direct tax revenue for the income year 2000 amounted to SEK 3.5 M. Tax revenues to municipalities added up with county councils, together comprised approximately 45% of the total tax revenues, a sum of 1.6 M SEK. National government revenues amounted to SEK 1.9 M, or 55% of the direct tax revenues. These 55 % is a result of adding up national government tax revenues from taxation of capital (SEK 1.5 M), and tax revenues from funds for expansion (SEK 0.4 M) as national government revenue for the current year (Table 5).

Tax revenues to municipalities where the non-resident owners resided amounted to SEK 0.47 M or 13% of the total direct tax revenues of SEK 3.5 M. Taking in consideration tax revenues to the county council as revenue that partly accrues to the municipalities, total municipal tax revenues to non resident municipalities amounted to SEK 0.68 or close to 20% of the direct tax revenues (Table 5).

The boreal municipality of Storuman, obtained SEK 0.61 M in local government tax revenue from resident owners. This represents approximately 17% of the total direct tax revenues generated from NIPF, i.e. to municipalities, county councils and national government. Taking in consideration tax revenue to the county council as a revenue that partly accrues to the municipality, and adding this sum to the SEK 0.61 M in primary municipality income tax revenues, the municipality of Storuman obtained SEK 0.87 M or close to 25% of the total direct tax revenues generated (Table 5). NIPF owners in possession of forestland in other municipalities but with residence in Storuman, generated about SEK 79,000 in tax revenues to the municipality budget of Storuman (not presented in tables).

Table 5. Direct tax revenues generated from NIPF in Storuman to resident and non-resident municipalities and to the national government^a

Tax revenue category	Resident owners	Non-resident owners	Total
Primary municipality revenues from taxation of income from NIPF			
Sum (SEK) (%)	606,064 (56)	473,690 (44)	1,079,754 (100)
Percent of total direct tax revenues	17	13	30
County council revenues from taxation of income from NIPF			
Sum (SEK)	262,473 (55)	212,130 (45)	474,603 (100)
Percent of total direct tax revenues	8	6	14
Total municipal revenues from taxation of income from NIPF ^b			
Sum (SEK)	868,537 (56)	685,820 (44)	1,554,35 (100)
Percent of total direct tax revenues	25	20	45
National government revenues from taxation of capital yield from NIPF			
Sum (SEK)	905,230 (59)	641,629 (41)	1,546,859 (100)
Percent of total direct tax revenues	26	18	44
National government revenues from taxation of NIPF income retained for expansion			
Sum (SEK)	303,399 (74)	108,987 (26)	412,386 (100)
Percent of total direct tax revenues	9	3	12
Total national government revenues from taxation of NIPF capital yield and income retained in fund for expansion ^c			
Sum (SEK)	1,208,629 (62)	750,616 (38)	1,959,245 (100)
Percent of total direct tax revenues	34	21	55
Total direct tax revenues			
Sum (SEK)	2,077,165	1,436,437	3,513,603
Percent of total direct tax revenues	60	40	100

^a Numbers in parentheses represent percentages of row totals.

^b Tax revenue to the local government budget, i.e. revenue based on primary municipality rate added up with county council revenue of which part accrues the primary municipality, for example by means of health care supplied by the county council.

^c None of the owners included reached the income threshold for the national governmental income tax. Total national government direct tax revenue is here represented by revenues from taxation of NIPF capital yield, and income retained in fund for expansion.

Disposable income from capital and work as sources of income within the firms, amounted to SEK 7.4 M (Table 6). Those with activity measured as sales the current year, accounted for 80 % of the disposable income (not presented in tables).

Table 6. Total and mean disposable income of NIPF owners from work and capital, income year 2000

Income category	Resident owners	Non-resident owners	Total
Total disposable income (SEK)	4.2M	3.2M	7.4M
Mean disposable income (SEK)	4,921	4,446	4,706

Results Related to Sales and Forest Land

Adding investment and operating costs, 92 % of sales can be regarded as returned back into the forest properties within the municipality (Table 7). However, considering only NIPF owners with sales activity the current year, about 77% of sales proceeds can be regarded as returned back into the forest properties, e.g., forest owners also do investment during years when they have no sales activity (not presented in tables).

Concerning operating costs only, residents returned slightly more of their sale proceeds back into the forest properties than non-residents, 72% comparable to 71%. However, disaggregating items in the operating costs revealed that for expenditures on goods and materials, resident owners returned 26% of sales revenue while non-residents returned 14% (not presented in tables). Regarding inventories as a separate item included in the investment category, residents as well returned more; inventories represented nearly 19% of sales proceeds for residents, non-residents invested 4% in inventories (not presented in tables). Investment in total for income year 2000 represented 25% and 11% of sales revenue for residents and non-residents respectively (Table 7). Considering time invested in the properties, resident owners made 57 declared self-employment hours, compared with 14 hours for the non-residents (not presented in tables).

Table 7. Operating costs, investment and disposable income as share of sales revenue, resident and non-resident NIPF owners, municipality of Storuman, income year 2000

Cost or revenue category	Resident owners	Non-resident owners	Total
Operating costs (% of sales revenue)	72	71	72
Investment (% of sales revenue)	25	11	20
Disposable income from work and capital (% of sales revenue)	17	24	19

^a Note that it is not possible to sum up percentages to a sales revenue of 100, since for example untaxed reserves or equalisation of income not included in this study, influence the result.

There was a small difference in sales value in SEK per hectare of productive forest land between residents and non-residents (Table 8). However, considering only those with an activity, non-residents had SEK 150 more in sales revenue per hectare than resident owners (not presented in tables). Return of a larger share of sales, in the form of operating costs and depreciation of investments, implies less tax revenue. Further, it can imply less possibility for private consumption outside the firm. Relating disposable income to productive forest land reveals that non-residents obtained a possibility for private consumption of SEK 109 comparable to residents SEK 73 (Table 8).

Table 8. Sales, operating costs, investments and disposable income per productive hectare, resident and non-resident NIPF owners, municipality of Storuman, income year 2000

Cost or revenue category	Resident owners	Non-resident owners	Total
Sales revenue (SEK/ha)	457	453	456
Operating costs (SEK/ha)	329	323	327
Investment (SEK/ha)	116	49	93
Disposable income from work and capital (SEK/ha)	73	109	85

Including county council and municipality income tax revenues, the municipality of Storuman received tax revenues of SEK 15/ha (Table 9), which represents 4% of sales revenue (not presented in tables). Municipalities where non-residents resided received tax revenues of SEK 23/ha (Table 9), corresponding to 5% of sales revenue (not presented in tables). National government tax revenues amounted to SEK 21/ha from residents (Table 9), which represents 5% of sales revenue (not presented in tables), and SEK 26/ha from non-residents (Table 9), corresponding to 6% of sales revenue (not presented in tables). National government tax revenue is based on SEK 19/ha and SEK 13/ha retained in expansion fund for residents and non-residents respectively, as well as SEK 52/ha and SEK 73/ha in income from capital for residents and non-residents respectively (not presented in tables).

Table 9. Municipality and national government tax revenues per productive hectare resident and non-resident NIPF owners, municipality of Storuman, income year 2000

Revenue category	Resident owners	Non-resident owners	Total
Total municipal tax revenues (SEK/ha)	15	23	18
National government direct tax revenues (SEK/ha)	21	26	22

Taking in consideration the number of eighty four owners excluded from the quantification of tax revenues and disposal income. Tax revenues for the municipality of Storuman would increase by about 2.5% in total, whereof 1.8% goes to the primary municipality budget. For municipalities where non-residents reside, tax revenues increases by about 2.3% in total whereof 1.6% goes to the primary municipalities. National government direct tax revenues should increase by 2.4%. Disposable income would increase by 2.5% and 2.2%, for residents and non-residents respectively.

DISCUSSION

From a fiscal and policy point of view, the outcome of the tax system considering operating cost, investment, disposable income, and direct tax revenues generated – sheds light on whether NIPF is a resource contributing to the local economy and thereby to development and maintenance of infrastructure within the municipality, given the current ownership structure.

Research Findings from a Resident and Non-Resident NIPF Owner Perspective

Considering sales revenue, results reveal that there was no clear difference in sales revenue per hectare between residents and non-residents across all owners. However, considering owners with declared activity, non-residents had SEK 150 more in sales revenue per hectare than resident owners. This indicates that resident owners tend to distribute their forestry activities more evenly over time compared to non-residents. This is reasonable since they have larger properties and more constant association with the property. The generated sales results are higher than expected, in relation to timber production capacity in this area. The explanation is methodological. Part-owners of the forest common have to be considered in this context. The definition of NIPF owners includes owners of agricultural property without productive forestland, but in possession of productive forestland by means of their ownership in the forest common. Hence these owners can, by means of the dividends from the forest common, generate a high value of sales per hectare. However, this is not further considered in this study, and is only part of the explanation. In sales per hectare, also '*value of goods and material withdrawal from the business activity*' are included, which implies that not only timber sale is included in sales revenue. Some NIPF owners can have income from some kind of small-scale refining that also becomes included in sales revenue, and selling of firewood further constitutes taxable income.

Net-income taxation allows NIPF owners to deduct costs needed to maintain a taxable income within the firm, and to deduct investments. Residents return an equal proportion of their sale proceeds in the form of operating costs back into the forest properties (just over 70%). However, disaggregating items included in the operating costs reveals that for expenditures on goods and materials resident owners returned 26% of sales revenue, while non-residents returned 14%. Concerning investment for the current year, residents invested 25%, and non-residents 11% of sales. Inventories as an item in the investment category can include, for example, machinery used in forestry. Inventories represented nearly 19% of sales proceeds for residents, while non-residents invested 4% in inventories. Differences between residents and non-residents in these returns of sales revenue can be related to self-employment. More equipment is needed if the forest owner is active in the management of the property. Result shows that resident owners had a mean number of 57 declared self-employment hours, compared with 14 hours for the non-residents.

From the viewpoint of maximising disposable income, non-residents can be considered as more rational. Per hectare, residents had a disposable income of SEK 73/hectare and non-residents SEK 109/ha. However, from a resident perspective another type of rationality can be identified, namely to return money back into the firm in form of operating costs and investments. These returns can be used to fulfil

objectives with the forest property other than profit maximisation. Taking in consideration investment, operating costs, disposable income, and self-employment hours, residents can be characterised as producers as well as consumers of their property rights, in a more versatile way comparable to non-residents. These differences are reinforced by differences in money retained in the fund for expansion, if one considers the fund for expansion literally. The fund for expansion was designed to correspond to part of the income set aside to work within the firm, in order to accomplish uniformity between different legal forms of business activities. The results reveal that residents returned 19 SEK/ha comparable to 13 SEK/ha for non-residents. Uniformity between different forms of business activities also allows NIPF owners to calculate a considered normal capital yield, for capital taxation purposes. In contrast to the expansion fund, an individual that for various reasons prefers consumption outside the firm can be favored by this opportunity. Non-residents transferred more money to capital as source of income than residents, of SEK 73/ha compared to SEK 52/ha, suggesting a higher priority for consumption outside the property.

Research Findings from a Municipality and National Government Perspective

Concerning fiscal implications of the tax system, results reveal that residents generate about SEK 621,000⁶ in tax revenues to the primary municipality. This corresponds to less than 1% of the tax revenues in the municipality budget of Storuman. Non-resident owners generated SEK 485,000⁶ in tax revenues to their municipalities of residence. This can be seen as an outflow of tax revenues from the boreal municipality. However, individuals living in Storuman in possession of forest properties in other municipalities only, or with a greater area of productive forest land in other municipalities than in the study municipality represents non-residents in other municipalities. These NIPF owners generated about SEK 79,000 in tax revenues to the municipality budget of Storuman. This sum can be compared to tax revenues generated to the primary municipalities where the non-residents lived, of SEK 485,000. The difference demonstrates that more tax revenues from the forest resources in Storuman flow out from the municipality, compared to the amount of money that is assigned to the municipality from forest owners living in the case study municipality, but in possession of forest in another municipality. However, differences in funding requirements between municipalities should be equalised by the income and cost equalising system. At a national level, NIPF ownership within Storuman generated about SEK 2 M in direct tax revenue to the national government⁶. This sum exceeds tax revenues generated to the municipality of Storuman as well as tax revenues generated to non-resident municipalities.

The fiscal implications of the results are not the only perspective to be considered in a boreal municipality context. Low taxable income and profits can be a result of return of money back into the firm. Operating costs and investment for the current year, in addition to disposable income and tax revenues, represent an input to the municipal economy. Even so, the structure of the rural area implies leakages of money from the municipality (see Lindgren *et al.* 2000). The returns to the local economy depend on what and where forest owners reinvest or purchase. It may be

⁶ Including tax revenues from individuals not included in the results tables due to methodological reasons.

assumed that most of the money returned to non-resident firms as well as disposable income is spent outside the municipality. In that case, adding up operating costs, investment, municipal tax revenues and disposal income for residents indicates an initial financial input before leakages of about SEK 31 M in the municipality of Storuman. This amount represents money that stimulates both private enterprises and the public sector within the municipality. Even though a gross value, this sum can be compared with figures in the annual municipality budget of Storuman, in order to gain some impression of its magnitude. The cost equalising part, which equalises what is regarded as unimpressible structural costs between municipalities, amounted to SEK 48 M for the current year (Table 1).

The results must be viewed not only from the perspective that non-residents can be assumed to consume outside the municipality, or from the perspective of the restricted municipality tax right. Results indicate also that ownership category and the structure of resident and non-resident ownership can be of importance from a municipality point of view. Differences in mode of action between residents and non-residents can be considered as more or less advantageous for the boreal municipality. The low average disposable incomes indicate that few forest owners can depend on forestry for a living, and that other values of the property must be of importance for the forest owner. Return of means back into the property can be assumed to contribute to such values. All in all, residents appear to return more money back into the firms than non-residents, and also to have greater self-employment hours. A resident NIPF owner that consumes or utilises returns to the forest property locally, can be assumed to generate value added in form of economic and social activities within the municipality to a greater extent than a non-resident owner, that return less money into the property, spend less time on the property, and pays income tax in another municipality.

CONCLUDING REMARKS

The case study reported here indicates that tax revenues from NIPF ownership scarcely can support an opinion, where NIPF is considered as a resource contributing to development and maintenance of infrastructure within the municipality. NIPF owners generate little local tax revenue for the municipality, both in absolute terms and relative to the amount of tax revenue generated for the national government. In addition, tax revenues to non-residential municipalities from the forest resource in Storuman exceeded tax revenues generated to Storuman, from forest resources in other municipalities. Consequently, there was a net outflow of tax revenues from NIPF for the municipality of Storuman.

In contrast to the low revenue for the municipal government, NIPF owners return much money into their properties, which in turn stimulates local enterprises and the public sector. This has to be considered as the main benefit of forestry for the municipality, and can partly be attributed to the design and application of the tax system. This condition can support the question addressed and it may encourage the municipality to see forestry as a resource for development and maintenance of infrastructure. The findings of this study also suggest that ownership category is of importance for the boreal municipality. According to the results, residents returned more in both time and money into their properties than non-resident owners. At the

same time, they seemed less interested in using capital from the property for private consumption.

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